

Matwiejczuk, Wieslaw; Gorustowicz, Mariusz

Working Paper

Determinants of economic fluctuations in the construction sec-tor

Institute of Economic Research Working Papers, No. 74/2017

Provided in Cooperation with:

Institute of Economic Research (IER), Toruń (Poland)

Suggested Citation: Matwiejczuk, Wieslaw; Gorustowicz, Mariusz (2017) : Determinants of economic fluctuations in the construction sec-tor, Institute of Economic Research Working Papers, No. 74/2017, Institute of Economic Research (IER), Toruń

This Version is available at:

<https://hdl.handle.net/10419/219897>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/3.0/>



Institute of Economic Research Working Papers

No. 74/2017

**Determinants of economic fluctuations in the
construction sector**

Wiesław Matwiejczuk, Mariusz Gorustowicz

Article prepared and submitted for:

9th International Conference on Applied Economics Contemporary Issues in Economy, Institute of Economic Research, Polish Economic Society Branch in Toruń, Faculty of Economic Sciences and Management, Nicolaus Copernicus University, Toruń, Poland, 22-23 June 2017

Toruń, Poland 2017

© Copyright: Creative Commons Attribution 3.0 License

Wiesław Matwiejczuk, Mariusz Gorustowicz

Białystok University of Technology, Wiejska 45 A, 15-668 Białystok, Poland, e-mail: w.matwiejczuk@pb.edu.pl

Białystok University of Technology, Wiejska 45 A, 15-668 Białystok, Poland, e-mail: m.gorustowicz@pb.edu.pl

Determinants of economic fluctuations in the construction sector

JEL Classification: *D24; E32; F60; L78*

Keywords: economic situation, determinants, factors, internal environment, the construction sector

Abstract

Awareness and ability to possibly eliminate the potentially adverse consequences of economic fluctuations can constitute an extremely important factor of the financial condition and competitive position of the company as well as the entire construction sector. Especially in the construction sector creating a catalog of factors affecting economic fluctuations is important from the point of view of not only the economy but also the company. The analysis carried out in this article of situation fluctuations in the construction industry in recent years allow to specify the factors that largely determine the conditions for construction enterprises development and shaping their competitiveness.

Research background: The specifics and operation conditions of enterprises including the construction sector companies cause sensitivity to economic fluctuations manifested in the cyclical disorders of economic activity level (business cycles). Background research work is to determine the effect of internal and external environment on a range of determinants of the economic situation fluctuations potentially occurring in the sphere of the construction sector.

Purpose of the article: The aim of this article is to present the main factors affecting economic condition fluctuations in the construction sector and their impact on company operation.

Methodology/methods: The following research methods and tools are used in this work:

- analysis and critique of literature,
- examination of documents,
- analysis and synthesis,
- descriptive statistics.

Findings: The result of the study and documents analysis will include identification of factors affecting to the highest degree the economic fluctuations in the construction sector. These factors will be specified from among the macro-economic environment but mainly from the internal environment of the company. Developed

proposals will be useful in building the short- and long-term operation strategy for both the construction companies and the entire sphere of the construction sector.

Introduction

Economic development occurs in phases of the so-called business cycle, which includes periods of both development and crisis. The duration of each phase and the scale of economic booms and downturns depend on many macro and microeconomic factors, including a suitable and well-managed national economic policy and, to an increasing degree, on various economic instruments used by international organisations. Finding effective countermeasures to offset the negative effect of uncontrolled factors on business is extremely difficult. A sector that is particularly dependent on and sensitive to economic fluctuations is the construction sector. The sensitivity of the construction sector to economic changes is visible among others in the cyclic changes in the level of economic activity of businesses, their financial condition and level of employment.

Macroeconomic developments, such as the business cycle, have a remarkable influence on firms and their performance (Frosen *et al.*, 2016, p. 91). The creation of a catalogue of factors affecting economic fluctuations, especially in the construction sector, is essential from not only an economic, but also a business point of view. The analyses of economic fluctuations in the construction sector in recent periods carried out in this article allow us to specify those factors which determine the conditions of development for construction businesses and their competitiveness to the greatest degree. The background research of this study was to determine the effect of the internal and external environment on the range of potential determinants of economic fluctuations in the construction sector.

The aim of this article is therefore to present the main factors affecting economic fluctuations in the construction sector and their effect on the functioning of businesses. These factors will be specified from the macroeconomic environment, but above all from the internal environment of the business.

Research Methodology

The subject of research in this article is determining the significance of main factors affecting cyclic abnormalities in the level of economic activity of businesses in the construction sector, their essence, process and the consequences of the continued functioning of the business. An important objective is to identify those factors which determine the conditions for the development of construction businesses and shape their competitiveness to the greatest degree.

The research was carried out on businesses from the construction sector which are active in Poland, grouped according to their size: from micro-businesses to small and medium businesses, to large construction corporations.

In order to gain concrete and confirmed arguments to form certain theses, a range of research tools were used, thanks to which the final results can be the basis of further academic discussion, including further research on this phenomenon. A critical review of subject literature has also been carried out in the presented article, as well as research on documents in the form of descriptive statistics and analysis and synthesis.

In the main empirical research it was decided that an indirect method of quantitative research, namely questionnaires, should be used, with both internet PAPI (*Paper and Pencil Interview*) and conventional (reaching the respondent directly) questionnaires. The internet questionnaires were carried out in the period of January – March 2017 using the e-mail of one of the largest internet services for creating questionnaires and tests. Altogether around 200 links to the web page were distributed. 55 correctly completed questionnaires were received, of which 2 were discarded as a result of gap in the participant's data in the questionnaire. Therefore 53 questionnaires qualified for final analysis.

Paragraph

1. The theoretical basis of economic fluctuations in the market economy

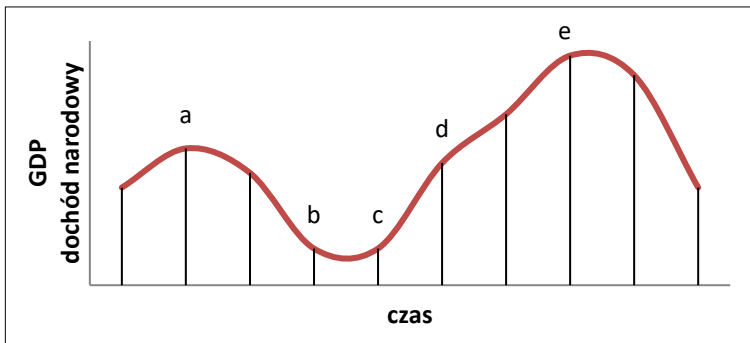
While examining the subject of the market economy and its conditions, an important aspect of research is the business cycle. Despite many years of research and the undertaking of this topic by many researchers, it remains intriguing and inclines us to keep studying its origins and effects.

Modern business cycles occur in both highly developed economies and in systems that are in a period of transformation, and are deformed with respect to the aforementioned definition of the classic business cycle. These deformations consist of, among others, modifications in the origins of the cycles, the mechanism by which fluctuations are formed, and above all their morphological characteristics. These differences are a result of the simultaneous effect of economic, institutional and political factors which vary by strength and direction. Among these, the most significant are: changes in the mechanism of the market, intensifying structural transformations, an increase in the level of openness of modern economies, i.e. an increased importance of the movement of goods and manufacturing factors on an international scale, phenomena and crisis processes in the currency

sector and changes in the objectives and instruments used by government bodies to influence economic processes. (Barczyk *et al.*, 2006, p. 144). Most modern theories of the business cycle assume that fluctuations are driven by changes in current fundamentals, such as aggregate productivity. The last several years have witnessed a resuscitation of an older theory in which business cycles can arise without any change in fundamentals at all (Barsky & Sims, 2011, p.273).

It is indicated that the traditional business cycle consists primarily of 4 phases Milewski, 2012, p. 373). Figure 1 shows a graph of the business cycle.

Figure 1: Phases of the business cycle (a-b recession, b-c depression (stagnation), c-d expansion, d-e boom)



Source: Milewski R., *Elementarne zagadnienia ekonomii*, PWN, Warszawa 2012, s. 374

The patterns of cyclic development do not mean that factors differentiating the course of economic fluctuations in time and space do not occur. The course of the cycle is irregular. The length of individual phases and the amplitude of fluctuations differ. Experience confirms that no two cycles are identical. In these variations we can however uncover certain patterns and similarities (Milewski, 2012, p. 374).

At the present time, aside from the four phases of the cycle, researchers often point to only two phases: **decline**, which consists of the phases of recession and depression, and **growth**, consisting of the phases of expansion and boom. Significantly, business cycles determine so-called economic trends, which are a graphic illustration of long term growth or decline. A common perception among economic observers is that macroeconomic fluctuations are not driven only by current developments in the economy but are often influenced by perceptions of future developments, that is, they

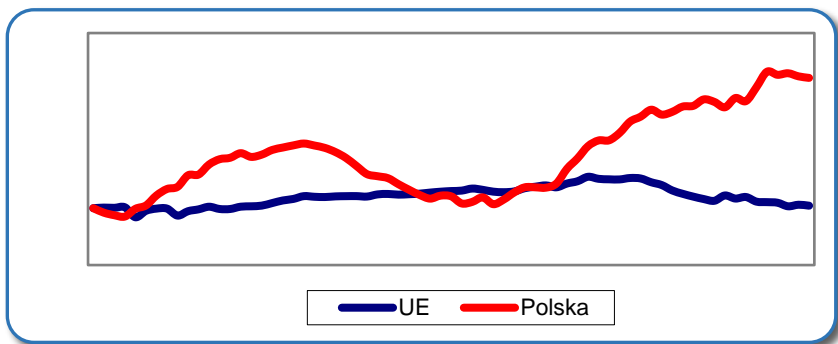
may be driven by changes in expectations about fundamentals as opposed to current changes in opportunities or preferences (Beaudry & Portier, 2007, pp. 458).

2. The susceptibility of the Polish construction sector to economic fluctuations

The construction sector and the firms that form it are an important part of the European and, even more so, the Polish economy. In Poland, the construction sector has been subjected to various internal and external influences over the last 27 years, which have been reflected in substantial economic fluctuations and changes.

An analysis of the statistical data of construction shows that the rate of development of Polish construction is characterised by huge fluctuations, which causes it to stand out in a negative light when compared with the stable development of EU construction (figure 2). The above fluctuations cause adequate difficulties in the stabilising of the production potential of firms and in the rational allocation of resources (Matwiejczuk & Samul, 2013, p. 117).

Figure 2. The construction production trend in the EU and Poland in the years 1995-2012 (2005=100)

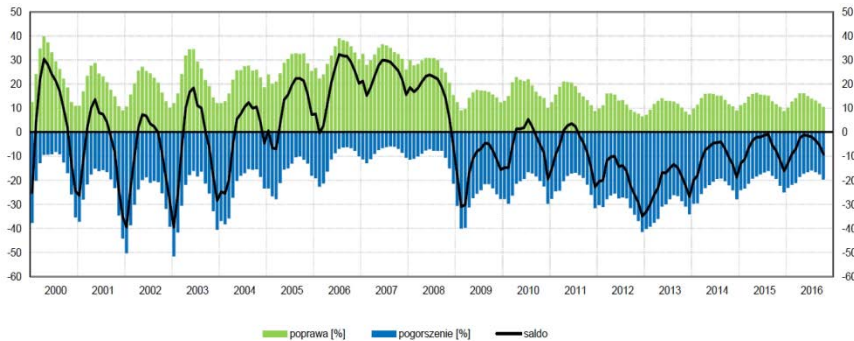


Source: own elaboration based on.: Eurostat, *Construction production*, www.eurostat.ec.europa.eu, [date of entry 27.03.2012]; *Mały Rocznik Statystyczny*, GUS, Warsaw, years 2000-2013

Economic fluctuations in construction, revealed above all in changes in levels of investment, the value of construction production, employment levels, the price level etc. are a result of the developmental processes that occur in the economy. Intuitively, entrepreneurs have a tendency to start new businesses when optimistic economic outlook prevails (Fan *et al.*,

2016, p. 159). Figure 3 illustrates the breakdown of the general economic climate in construction by year.

Figure 3. Economic fluctuations in construction in the period 2000 – 2016.



Source: <http://stat.gov.pl/obszary-tematyczne/koniunktura> - Wyniki badania koniunktury w przemyśle, budownictwie, handlu i usługach , 2.03.2017

An analysis of long term trends confirms high economic fluctuations in construction.

3. Factors conditioning the business climate in construction – results of the study

The characteristics of businesses, including construction businesses, and conditions under which they operate lead the sector to be directly sensitised to economic fluctuations, which can be observed in business cycles. Firms in the construction industry have always had to deal with the challenges of the economic cycle and develop strategies to deal with the resulting fluctuations in their business environment (Ruddock *et al.*, 2014, p. 225).

There are many sources of this state, however as Griffin points out from the point of view of an organisation, the organisation's environment, divided into external and internal, conditions the functioning of the business. In addition, three basic categories can be used to explain the effect of the environment on organisations: the variability and complexity of the environment, the strength of competitors and interferences in the environment (Griffin, 2013, pp. 75-89).

In the questionnaire that was prepared for the purposes of this research, three groups of potential factors conditioning the business climate were indicated:

- **Exogenous (external) factors;**
- **Endogenous (internal) factors;**
- **A comparison of the effect of individual groups of factors.**

An analysis of the specified data points to the fact that most answers were received from firms that had been functioning for over 10 years, with the status of micro or small businesses. This is significant from the point of view of the analysed topic, where time constitutes an important aspect of the process of economic fluctuations, and firms having been in business for over 10 years have considerable market experience and knowledge about the specificities of the sector.

A comparison of the basic groups of factors shows that internal factors have the greatest direct influence on the functioning of businesses (table 1). Businesses indicated that internal factors were from their point of view the most important, and constituted a significant determinant of economic fluctuations in the construction sector. The average score of this group of factors was 5.63 (on a 7 point scale). Among the external factors that had the lowest effect on the economic situation of businesses were global factors (average score 3.63).

Table 1. The direct influence of individual groups of factors on the functioning of businesses

Factors	Average score	Significance %	Median
Score on a scale of 1-7			
Global factors	3,63	14,28%	3
National factors	4,15	20,85%	5
Regional and local factors	4,40	24,28%	6
Internal factors	5,63	26,28%	6

Source: own elaboration based on carried out research

Among *the internal determinants*, some particularly important factors were: correct management decisions regarding the functioning of the business in times of both recession and boom along with having highly qualified employees (average score over 6 points, median 7). Slightly lower (average scores of 5.90 points and 5.80 respectively, and a median of 6) scores were recorded for the continuous monitoring of the environment both close to the business and further afield (competition, clients, suppliers) and well thought through investment of profits in development, creating a buffer for periods of decline in the sector. The remaining four factors in this group were given lower scores, nevertheless compared with factors from other groups, they still scored highly (table 2).

Table 2. The influence of individual factors from the internal factors group on the functioning of the business

Factors	Average score	Significance %	Median
Score on a scale of 1-7			
The level of innovativeness of technology used	5,00	22,14%	5
The elasticity of the business strategy taking into account the situation on the market and the speed at which it can react to market changes	5,42	24,00%	5
Correct management/board decisions regarding the functioning of the business in times of both recession and boom	6,16	27,28%	7
Well thought through investment of profits in development, creating a buffer for periods of decline in the sector	5,80	25,14%	6
The management team taking initiative	5,20	21,85%	6
Having highly qualified employees	6,23	26,71%	7
Running a business with a forward-looking production profile	5,28	21,14%	6
Continuous monitoring of the environment both close to the business and further afield (competition, clients, suppliers)	5,90	26,14%	6

Source: own elaboration based on carried out research

Analysing the received data from the first part of the study regarding exogenous factors, it should be noted that in the group of global determinants, the factor which had the most significance was *rapid technological advances* (average score 4.80 points), and the factor which had the least significance was *integration processes of countries* (average score 2.90 points).

Among ***national factors***, the study indicated a considerable effect of *national fiscal policy, stimulating or restraining economic activity according to the needs resulting from the course of the business cycle* (average score 5.29 points) as well as *the increase of investment and financial expenditure directly from the national budget and external subsidies e.g. from the EU* (5.19 points). The factors with the lowest significance according to respondents were those regarding *the national monetary policy and protectionism with regard to foreign trade (tariffs, quotas, embargos and non-tariff barriers)* (average score 3.3 – 3.5 points). Obtaining such results seems to be dictated by certain changes, in both the micro and macro environment, which can be observed thanks to, for example, EU funds as well as the widening of the platform of cooperation of firms in the construction sector, both with regard to technology and to their order portfolios

With respect to ***regional and local factors*** the largest proportion of responses indicates the importance of factors regarding *pro-business policies of local authorities* (average score 5.40 points) as well as *cooperation with national control bodies* (average score 4.30 points). The factor that was indicated the least was *cooperation with business environment institutions*

(average score 3.87 points). The small proportion of respondents indicating BEI could signify that they are not direct “players” on the market, but only a factor influencing the institutions and market in the construction sector to a lesser degree.

Conclusions

Economic fluctuations in the construction sector are, similarly to in other sectors of the economy, a result of the state of the economy and its dependencies on internal and external factors. Comparing the strength of individual factors is key in order to understand the mechanisms of the operation of businesses in a complex business environment. The results of this study confirm the large interest of firms in discovering the forces that could influence the state of their organisations. The fact that the greatest interest of firms is geared towards internal factors can be explained by the sense and need to increase their own possibilities of affecting economic reality. It is also an expression of the strength of a business on the market that, grouped into a sector (in this case the construction sector), can influence the taking of remedial action against the negative effects of economic fluctuations.

It should be noted that the level of internationalisation of businesses in the construction sector grows from year to year, as will therefore the role of external factors. However, despite increased opportunities to acquire current economic information on the state of national economies, as well as the international environment, predicting the occurrence of the next phase of the business cycle, for example a recession, is very difficult. That is also why the indicated determinants of economic fluctuations in the construction sector, in conjunction with the mechanism of the business cycle, can form a system of dependencies, which in our present, highly unpredictable world, will continually evaluate and deliver new information and arguments for further research in this area. The applicational nature of this research will consist of the elaboration of recommendations for short and long term operating strategies which will be useful to firms in the construction sector. The search for reliable information, which is necessary in order to react and prepare businesses for the effects of a possible recession in the right way, is nowadays one of the most important tasks of an organisation.

*The research was performed under the project No. S/WZ/3/2015 and financed by means of Ministry of Science and Higher Education.

References

- Barczyk R., Kąsek L., Lubiński M., Marczewski K. (2006). *Nowe oblicza cyklu koniunkturalnego*, PWE.
- Barsky, RB., Sims, ER. (2011). News shock and business cycles *Journal of Monetary Economics*, Vol 58, DOI: <http://dx.doi.org/10.1016/j.jmoneco.2011.03.001>
- Beaudry, P., Portier, F. (2007). When can changes in expectations cause business cycle fluctuations in neo-classical settings?, *Journal of Economic Theory*, Vol. 135, DOI: <http://dx.doi.org/10.1016/j.jet.2006.06.009>
- Fan, HC., Gao, X., Xu, JY., Xu, ZW. (2016). News shock, firm dynamics and business cycles Evidence and theory, *Journal of Economic Dynamics & Control*, Vol 73, DOI: <http://dx.doi.org/10.1016/j.jedc.2016.09.010>
- Frosen, J., Jaakkola, M., Churakova, I., Tikkanen, H. (2016). Effective forms of market orientation across the business cycle: A longitudinal analysis of business-to-business firms, *Industrial Marketing Management*, No 52, <http://dx.doi.org/10.1016/j.indmarman.2015.05.012>
- Griffin W. R. (2013). *Podstawy Zarządzania Organizacjami*, PWN.
- Matwiejczuk W., Samul J. (2013). *Zarządzanie kapitałem ludzkim a konkurencyjność przedsiębiorstwa budowlanego*, Oficyna Wydawnicza Politechniki Białostockiej.
- Milewski R. (2012). *Elementarne zagadnienia ekonomii*, PWN.
- Ruddock, L., Kheir, A., Ruddock, S. (2014). UK Construction Companies Strategies in the face of business cycles, *International Journal of Strategic Property Management*, Vol 18, DOI: <http://dx.doi.org/10.3846/1648715X.2014.927400>
<http://stat.gov.pl/obszary-tematyczne/koniunktura> - *Wyniki badania koniunktury w przemyśle, budownictwie, handlu i usługach*, (2.03.2017).
- <http://www.eurostat.ec.europa.eu> Eurostat, Construction production, *Mały Rocznik Statystyczny*, GUS, Warszawa, lata 2000-2013 (27.03.2012).